

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Taylor et al.

Reissue Application for
U.S. Patent No. 5,891,143
issued April 6, 1999

Art Unit:

Examiner:

Serial No.: 954,003

Filed: Application Filed: October 20, 1997
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For: ORTHOPAEDIC FIXATION PLATE

April 5, 2001
Attorney Docket No. 39262/256238

BOX REISSUE
Commissioner of Patents
and Trademarks
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

This preliminary amendment is respectfully submitted in connection with the above-referenced application.

IN THE CLAIMS

Kindly re-write the claims as follows:

1. (Amended) An orthopaedic spatial fixation system for holding bone parts comprising a plurality of fixation plates wherein each plate includes a body portion having n attachment structures positioned therein, whereby said attachment structures are substantially positioned along an arc of α° of a circle defined by a diameter d , and the cord length between adjacent attachment structures is substantial equal to 1, and

$$d = l \left(\sqrt{\frac{1}{\tan^2 \left(\frac{\alpha}{2n} \right)} + 1} \right)$$

and whereby the diameter d for each plate within the system is unique, and the value for $n(360^\circ/\alpha)$ for each consecutive plate diameter d in the system is a multiple of 3.

2. (Amended) The orthopaedic spatial fixation system of claim 1 further comprising bone pins for interfacing the bone parts and plates; and,

a plurality of struts that extend between the plates to hold the plates in a selected position relative to one another and relative to the bone parts;

wherein the struts are attached to the plates at the attachment structures; and,

wherein a plurality of the struts have adjustable length sections for varying the length of the strut to adjust the relative position of the plates.

3. (Amended) The orthopaedic spatial fixation system of claim 2 wherein the attachment structures on at least one of the plates are one hundred twenty degrees (120°) apart.

4. (Amended) The orthopaedic spatial fixation system of claim 1 wherein rotation of one plate one hundred twenty degrees (120°) relative to an adjacent plate results in the same alignment of adjacent attachment structures as before such rotation of the plates.

5. (Amended) The orthopaedic spatial fixation system of claim 1 wherein the plates are symmetrically configured so that if one plate is placed over an adjacent plate, the attachment structures in each plate can be aligned.

6. (Amended) The orthopaedic spatial fixation system of claim 5 wherein the plates are symmetrically configured so that one plate can be flipped over without affecting the alignment of adjacent attachment structures.

7. (Amended) The orthopaedic spatial fixation system of claim 2 wherein there are two plates and each plate includes 3 attachment structures.

8. (Amended) The orthopaedic spatial fixation system of claim 7 wherein

there are six struts each having a first end and a second end;

the first end of each strut is attached to one of the plates and the second end of each strut is attached to the other plate;

the ends of the struts are attached to the plates at the attachment structures; and, each hole accommodates two strut ends, one from each of two adjacent struts.

Kindly add the following new claims:

9. The orthopaedic spatial fixation system of claim 1, wherein the attachment structures are holes.

10. The orthopaedic spatial fixation system of claim 1, wherein the attachment structures are pegs that are adapted to facilitate attachment of an accessories adapted to receive the pegs.

11. The orthopaedic spatial fixation system of claim 1, wherein the circle comprises a groove and the attachment structures are clamps attached to the groove.

12. The orthopaedic spatial fixation system of claim 1, further comprising markings or etches to designate the attachment structure positions.

13. The orthopaedic spatial fixation system of claim 1, further comprising one or more plates being multiple diameter plates having a second set of attachment structures.

14. The orthopaedic spatial fixation system of claim 13, wherein the second set of attachment structures is not spaced according to the diameter equation and cord length limitations.

REMARKS: STATEMENT OF SUPPORT

The invention as claimed is an orthopaedic spatial fixation system which provides a unique positioning of the attachment structures. The claims as issued recite only holes as possible attachment structures, but the specification discloses other embodiments. Support for the amendments appears in the specification at column 8, lines 55-67 and Figure 11. Accordingly, the claims have been amended because the patentees literally claimed less than they had a right to claim, in accordance with 35 U.S.C. § 251.

Applicants have made no changes to the specification or to the drawings contained in the original patent. Upon entry of the present amendment, claims 1-14 will be pending in this Application.

Applicants have added claims 9-12 to further define that the attachment structures may be holes (as originally claimed) as well as pegs, grooves with clamps, etc., as described in the specification at column 8, lines 55-67 and Figure 11. These features, however, were not recited in the claims.

Applicants have also added claims 13-14 to further define that multiple diameter plates, as shown in Figure 10 and described at column 8, lines 46-54, are within the scope of the invention. Multiple diameter plates have a second set of attachment structures that are not necessarily limited by the diameter equation and the cord length limitations of claim 1.

Version with Markings to Show Changes Made

Kindly amend the claims as follows:

1. (Amended) An orthopaedic spatial fixation system for holding bone parts comprising a plurality of fixation plates wherein each plate includes a body portion having n [holes] attachment structures positioned therein, whereby said [holes] attachment structures are substantially positioned along an arc of α° of a circle defined by a diameter d, and the cord length between adjacent [holes] attachment structures is substantial equal to l, and

$$d \sim l \left(\sqrt{\frac{1}{\tan^2 \left(\frac{\alpha}{2n} \right)} + 1} \right)$$

and whereby the diameter d for each plate within the system is unique, and the value for $n(360 \alpha)$ for each consecutive plate diameter d in the system is a multiple of 3.

2. (Amended) The orthopaedic spatial fixation system of claim 1 further comprising bone pins for interfacing the bone parts and plates; and,

a plurality of struts that extend between the plates to hold the plates in a selected position relative to one another and relative to the bone parts;

wherein the struts are attached to the plates at the [holes] attachment structures; and,

wherein a plurality of the struts have adjustable length sections for varying the length of the strut to adjust the relative position of the plates.

3. (Amended) The orthopaedic spatial fixation system of claim 2 wherein the

[holes] attachment structures on at least one of the plates are one hundred twenty degrees (120°) apart.

4. (Amended) The orthopaedic spatial fixation system of claim 1 wherein rotation of one plate one hundred twenty degrees (120°) relative to an adjacent plate results in the same alignment of adjacent [holes] attachment structures as before such rotation of the plates.

5. (Amended) The orthopaedic spatial fixation system of claim 1 wherein the plates are symmetrically configured so that if one plate is placed over an adjacent plate, the [holes] attachment structures in each plate can be aligned.

6. (Amended) The orthopaedic spatial fixation system of claim 5 wherein the plates are symmetrically configured so that one plate can be flipped over without affecting the alignment of adjacent [holes] attachment structures.

7. (Amended) The orthopaedic spatial fixation system of claim 2 wherein there are two plates and each plate includes 3 [holes] attachment structures.

8. (Amended) The orthopaedic spatial fixation system of claim 7 wherein

there are six struts each having a first end and a second end;

the first end of each strut is attached to one of the plates and the second end of each strut is attached to the other plate;

the ends of the struts are attached to the plates at the [holes] attachment structures; and,
each hole accommodates two strut ends, one from each of two adjacent struts.

Kindly add the following new claims:

- 9. The orthopaedic spatial fixation system of claim 1, wherein the attachment structures are holes.
10. The orthopaedic spatial fixation system of claim 1, wherein the attachment structures are pegs that are adapted to facilitate attachment of an accessories adapted to receive the pegs.
11. The orthopaedic spatial fixation system of claim 1, wherein the circle comprises a groove and the attachment structures are clamps attached to the groove.
12. The orthopaedic spatial fixation system of claim 1, further comprising markings or etches to designate the attachment structure positions.
13. The orthopaedic spatial fixation system of claim 1, further comprising one or more plates being multiple diameter plates having a second set of attachment structures.
14. The orthopaedic spatial fixation system of claim 13, wherein the second set of attachment structures is not spaced according to the diameter equation and cord length limitations.--

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CONCLUSION

Applicants submit that these amendments appropriately define the claimed subject matter and respectfully requests re-issuance of claims 1-14.

Respectfully submitted,



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